

**Notice of Allowability**

Application No.

10/706,814

Examiner

Nikita Wells

Applicant(s)

SAINTY, WAYNE GREGORY

Art Unit

2881

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Application and "Preliminary Submission" filed 13 November 2003.
2. ☒ The allowed claim(s) is/are 1-53.
3. ☒ The drawings filed on 13 November 2003 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All   b) ☐ Some\*   c) ☐ None   of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☒ Certified copies of the priority documents have been received in Application No. 09/744,205.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

Nikita Wells  
Primary Examiner  
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## Detailed Action

### *Allowable Subject Matter*

1. Claims 1-53 are allowed.
2. The following is an examiner's statement of reasons for allowance:

With respect to the independent claim 1, prior art fails to disclose or make obvious an ion source comprising an electron producing cathode, an anode, an ionization region between said cathode and said anode, a gas supply path for introducing an ionizable gas into said ionization region, said electron flow passing substantially through said ionization region and causing ionization of said gas, means for concentrating said electron flow to create a region within said ionization region where the electron flux is a maximum, wherein said gas supply path terminates in at least one aperture disposed in proximity to said region of maximum electron flux.

With respect to the independent claim 20, prior art fails to disclose or make obvious an ion source comprising an electron producing cathode, an anode, an ionization region between said cathode and said anode as disclosed in claim 1 above, wherein said anode has at least one surface exposed to said ionization region, at least a portion of the surface being of an electrically conductive non-oxidizing material.

With respect to the independent claim 25, prior art fails to disclose or make obvious an ion source as disclosed in claim 1 above, with a gas supply path for introducing an ionizable gas into said ionization region, wherein said gas supply path comprises a gas line terminating in an electrically conductive outlet member disposed within the ionization region, said outlet member

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having one or more apertures therein for providing communication of gas from the gas line to the ionization region, and wherein said outlet member is in electrical contact with said anode.

With respect to the independent claims 31, 35, and 40, prior art fails to disclose or make obvious an ion source as disclosed in claim 1 above, wherein said anode comprises an end wall, a side wall extending from the end wall in the direction of the cathode and sloping outwardly in the direction from the end wall toward the cathode such that the end wall and side wall together define a substantially conical ionization region with a closed end at the end wall and with an open end toward the cathode, and wherein said gas supply path comprises one or more tubes extending into said ionization region, each tube terminating in an aperture disposed adjacent the end wall.

The dependent claims 2-19, 21-24, 26-30, 32-34, 36-39, and 41-53, are allowable by virtue of their dependence upon the independent claims 1, 20, 25, 31, 35, and 40, respectively.

### ***Conclusion***


3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Both Kaufman et al. (6,608,431 B1, 6,750,600 B2, and 4,862,032) and W.G. Sainty (6,645,301 B2) disclose an End-Hall type ion source with introduction of ionizable gas into the discharge region.

4. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nikita Wells whose telephone number is (571) 272-2484. The examiner can normally be reached on 8:30 AM - 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on (571) 272-2477. The central fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

6. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Nikita Wells, Primary Examiner  
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August 31, 2004